

Amendments to the Claims:

This Listing of Claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.-41. (Cancelled).

42. (Currently Amended) A method of screening for a ~~potential HCV antiviral agent~~ an inhibitor of HCV p7 protein, comprising:

- (a) incorporating ~~at least one of~~ a p7 protein and a variant into a membrane to create a p7-containing membrane, wherein the p7-containing membrane has an increased permeability relative to a membrane that does not contain p7 protein;
- (b) contacting one or more components of the p7-containing membrane with a test compound;
- (c) comparing the permeability of the p7-containing membrane, wherein one or more components have been contacted with a test compound, to the permeability of a p7-containing membrane, wherein none of the components have been contacted with a test compound; and
- (d) observing a decrease in the permeability in the p7-containing membrane, thereby identifying the inhibitor of HCV p7 protein.

43. (Original) The method according to claim 42, wherein the p7 protein is selected from a member of HCV clade 1.

44. (Original) The method according to claim 42, wherein the p7 protein comprises the amino acid sequence

ALENLVILNAASLAGTHGLVSFLVFFCFAWYLKGRWVPGAVYALYGMWPLLLLLA
LPQRAYA (SEQ ID NO.: 1).

45. (Currently Amended) The method according to claim 42, wherein the p7 variant protein comprises at least one transmembrane domain.

46. (Cancelled).

47. (Currently Amended) The method according to claim 45, wherein greater than about 70% of the total amino acids of the transmembrane domain are members of the group consisting of F, I, W, Y, L, V, M, P, C, and A.

48. (Cancelled).

49. (Original) The method according to claim 42, wherein the p7 protein is contacted with the test compound.

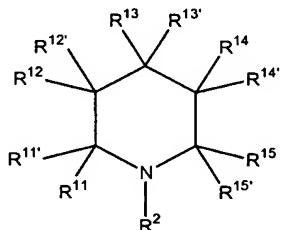
50. (Original) The method according to claim 42, wherein the permeability is compared by recording electrical currents through the membrane.

51. (Original) The method according to claim 42, wherein the membrane comprises a black lipid membrane.

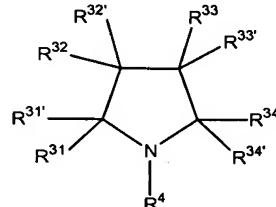
52. (Original) The method according to claim 42, wherein the test compound inhibits channel formation.

53. (Original) The method according to claim 42, wherein the test compound is a channel blocker.

54. (Original) The method according to claim 42, wherein the test compound is selected from the group consisting of compounds of formula I or II, related isomers; pharmaceutically acceptable salts, and solvates thereof:



I



II

wherein each substituent R¹¹, R^{11'}, R¹², R^{12'}, R¹³, R^{13'}, R¹⁴, R^{14'}, R¹⁵, R^{15'}, R³¹, R^{31'}, R³², R^{32'}, R³³, R^{33'}, R³⁴, and R^{34'} is selected, independently from each other, from a group consisting of -H; -OH; -F; -Cl; -Br; -I; -NH₂; alkyl- and dialkylamino; linear or branched C₁₋₆ alkyl, C₂₋₆ alkenyl and alkynyl; aralkyl; linear or branched C₁₋₆ alkoxy; aryloxy; aralkoxy; -(alkylene)oxy(alkyl); -CN; -NO₂; -COOH; -COO(alkyl); -COO(aryl); -C(O)NH(C₁₋₆ alkyl); -C(O)NH(aryl); sulfonyl; (C₁₋₆ alkyl)sulfonyl; arylsulfonyl; sulfamoyl, (C₁₋₆ alkyl)sulfamoyl; (C₁₋₆ alkyl)thio; (C₁₋₆ alkyl)sulfonamide; arylsulfonamide; -NHNH₂; -NHOH; aryl; and heteroaryl; wherein each substituent may be the same or different;

wherein each alkyl, alkenyl, alkynyl, aryl, and heteroaryl moiety may be optionally substituted with one or more groups independently selected from the group consisting of -OH; -F; -Cl; -Br; -I; -NH₂; alkyl- and dialkylamino; linear or branched C₁₋₆ alkyl, C₂₋₆ alkenyl and alkynyl; aralkyl; linear or branched C₁₋₆ alkoxy, aryloxy; aralkoxy; -(alkylene)oxy(alkyl); -CN, -NO₂, -COOH, -COO(alkyl); -COO(aryl); -C(O)NH(C₁₋₆ alkyl); -C(O)NH(aryl); sulfonyl; (C₁₋₆ alkyl)sulfonyl; arylsulfonyl; sulfamoyl, (C₁₋₆ alkyl)sulfamoyl; (C₁₋₆ alkyl)thio; (C₁₋₆ alkyl)sulfonamide; arylsulfonamide; -NHNH₂; and -NHOH; and

R² and R⁴ are substituents selected independently of each other from a group consisting of linear C₇₋₁₈ alkyl, substituted C₁₋₁₈ alkyl, branched C₃₋₁₈ alkyl, C₂₋₁₈ alkenyl and alkynyl, and aralkyl;

wherein each linear C₇₋₁₈ alkyl, branched C₃₋₁₈ alkyl, C₂₋₁₈ alkenyl and alkynyl, and aralkyl optionally may be substituted, and each substituted C₁₋₁₈ alkyl is substituted with one or more groups independently selected from a group consisting of -OH; -F; -Cl; -Br; -I; -NH₂; alkyl- and dialkylamino; linear or branched C₁₋₆ alkyl, C₂₋₆ alkenyl and alkynyl; aralkyl; linear or branched C₁₋₆ alkoxy, aryloxy; aralkoxy; -CN, -NO₂, -COOH, -COO(alkyl); -COO(aryl); -C(O)NH(C₁₋₆ alkyl); -C(O)NH(aryl); sulfonyl; (C₁₋₆ alkyl)sulfonyl; arylsulfonyl; sulfamoyl, (C₁₋₆ alkyl)sulfamoyl; (C₁₋₆ alkyl)thio; (C₁₋₆ alkyl)sulfonamide; arylsulfonamide; -NHNH₂; and -NHOH.

55. (Original) The method according to claim 42, wherein the test compound is amantadine or a derivative thereof.

56.-57. (Cancelled).

58. (New) A method of screening for an inhibitor of HCV p7 protein, comprising:

- (a) incorporating a biotinylated p7 protein into a membrane to create a p7-containing membrane, wherein the p7-containing membrane has an increased permeability relative to a membrane that does not contain p7 protein;
- (b) contacting one or more components of the p7-containing membrane with a test compound;
- (c) comparing the permeability of the p7-containing membrane, wherein one or more components have been contacted with a test compound, to the permeability of a p7-containing membrane, wherein none of the components have been contacted with a test compound; and
- (d) observing a decrease in the permeability in the p7-containing membrane, thereby identifying the inhibitor of HCV p7 protein.

59. (New) The method according to claim 58, wherein the biotinylated p7 protein comprises the amino acid sequence

ALENLVILNAASLAGTHGLVSFLVFFCFAWYLKGRWVPGAVYALYGMWPLLLLLA
LPQRAYA (SEQ ID NO.: 1).

60. (New) The method according to claim 58, wherein the biotinylated p7 protein comprises at least one transmembrane domain.

61. (New) The method according to claim 60, wherein greater than about 70% of total amino acids of the transmembrane domain are members of the group consisting of F, I, W, Y, L, V, M, P, C, and A.

62. (New) The method according to claim 58, wherein the biotinylated p7 protein is contacted with the test compound.

63. (New) The method according to claim 58, wherein the permeability is compared by recording electrical currents through the membrane.

64. (New) The method according to claim 58, wherein the membrane comprises a black lipid membrane.

65. (New) The method according to claim 58, wherein the test compound inhibits channel formation.

66. (New) The method according to claim 58, wherein the test compound is a channel blocker.